

112839

U.S. DEPARTMENT OF COMMERCE  
Patent and Trademark Office

# SEARCH REQUEST FORM

RECEIVED

Requestor's Name: 12 BITOMER Serial Number: 09/626,566  
 Date: 1/27/04 Phone: 272-0916 Art Unit: (STIC) 1651

## Search Topic:

Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevant citations, authors, keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevant claim(s).

MEY

PLEASE SEARCH CLAIM 43 WHERE  
 ANY ACRIDINIUM DERIVATIVE WITH  
 M-P AT THAT POSITION WHERE  
 ONLY  
 M = O  
 P = PO<sub>3</sub> OR ANY PHOSPHATE  
 ANY CATION

PLEASE CALL IF A QUESTION

## STAFF USE ONLY

Date completed: 1/29/04  
 Searcher: Jamill O'Bryen  
 Terminal time: \_\_\_\_\_  
 Elapsed time: 35  
 CPU time: \_\_\_\_\_  
 Total time: 20  
 Number of Searches: \_\_\_\_\_  
 Number of Databases: \_\_\_\_\_

### Search Site

\_\_\_\_ STIC  
 \_\_\_\_ CM-1  
 \_\_\_\_ Pre-S

### Type of Search

\_\_\_\_ N.A. Sequence  
 \_\_\_\_ A.A. Sequence  
 \_\_\_\_ Structure  
 \_\_\_\_ Bibliographic

### Vendors

\_\_\_\_ IG  
354 STN  
 \_\_\_\_ Dialog  
 \_\_\_\_ APS  
 \_\_\_\_ Geninfo  
 \_\_\_\_ SDC  
 \_\_\_\_ DARC/Questel  
 \_\_\_\_ Other

1 STR



# **STIC Search Report**

## **Biotech-Chem Library**

**STIC Database Tracking Number: 112839**

**TO: Ralph J Gitomer**  
**Location: rem/3D65**  
**Art Unit: 1651**  
**Thursday, January 29, 2004**

**Case Serial Number: 09/626566**

**From: Noble Jarrell**  
**Location: Biotech-Chem Library**  
**Remsen 01B71**  
**Phone: 272-2556**

**Noble.jarrell@uspto.gov**

### **Search Notes**

=> b reg

FILE 'REGISTRY' ENTERED AT 15:07:24 ON 29 JAN 2004  
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
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Property values tagged with IC are from the ZIC/VINITI data file  
 provided by InfoChem.

STRUCTURE FILE UPDATES: 28 JAN 2004 HIGHEST RN 642928-00-5  
 DICTIONARY FILE UPDATES: 28 JAN 2004 HIGHEST RN 642928-00-5

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

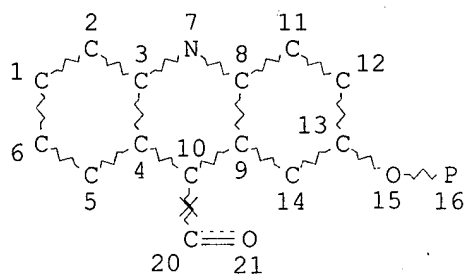
Please note that search-term pricing does apply when  
 conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more  
 information enter HELP PROP at an arrow prompt in the file or refer  
 to the file summary sheet on the web at:  
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> d que stat 116

L14 STR



NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE  
 L16 12 SEA FILE=REGISTRY SSS FUL L14

100.0% PROCESSED 2237 ITERATIONS  
 SEARCH TIME: 00.00.01

12 ANSWERS

=> b cap

FILE 'CAPLUS' ENTERED AT 15:07:36 ON 29 JAN 2004  
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FILE COVERS 1907 - 29 Jan 2004 VOL 140 ISS 5  
FILE LAST UPDATED: 28 Jan 2004 (20040128/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

'OBI' IS DEFAULT SEARCH FIELD FOR 'CAPLUS' FILE

=> d que nos 117

L14 STR  
L16 12 SEA FILE=REGISTRY SSS FUL L14  
L17 1 SEA FILE=CAPLUS ABB=ON PLU=ON L16

=> b marpat

FILE 'MARPAT' ENTERED AT 15:07:44 ON 29 JAN 2004  
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FILE CONTENT: 1988-PRESENT (VOL 104 ISS 15-VOL 140 ISS04) (20040123ED)

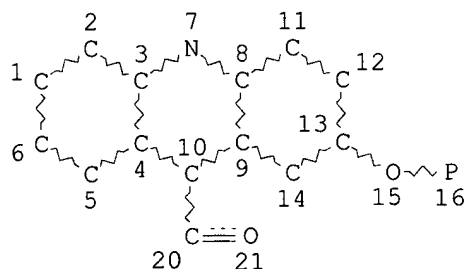
MOST RECENT CITATIONS FOR PATENTS FROM FIVE MAJOR ISSUING AGENCIES  
(COVERAGE TO THESE DATES IS NOT COMPLETE):

US 6667161 23 DEC 2003  
DE 10317295 24 DEC 2003  
EP 1371658 17 DEC 2003  
JP 2003346928 05 DEC 2003  
WO 2004000750 31 DEC 2003

Structure search limits have been raised. See HELP SLIMIT for the new, higher limits.

=> d que stat 122

L20 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE  
L22 3 SEA FILE=MARPAT SSS FUL L20

100.0% PROCESSED 2310 ITERATIONS 3 ANSWERS  
SEARCH TIME: 00.00.07

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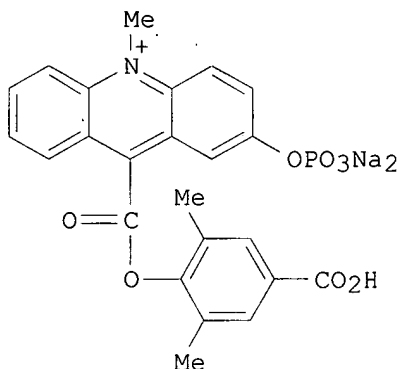
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USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
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PROCESSING COMPLETED FOR L17  
PROCESSING COMPLETED FOR L22  
L23 3 DUP REM L17 L22 (1 DUPLICATE REMOVED)  
ANSWER '1' FROM FILE CAPLUS  
ANSWERS '2-3' FROM FILE MARPAT

=> d ibib abs hitstr 1;d ibib abs qhit 2-3

*CAPLUS Answers* *MARPAT Answers*  
L23 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1  
ACCESSION NUMBER: 2001:101348 CAPLUS  
DOCUMENT NUMBER: 134:159459  
TITLE: Chemiluminescent substrates of hydrolytic enzymes such  
as phosphatases  
INVENTOR(S): Jiang, Qingping; Natrajan, Anand; Sharpe, David J.;  
Wong, Wen-jee; Law, Say-jong  
PATENT ASSIGNEE(S): Bayer Corporation, USA  
SOURCE: PCT Int. Appl., 156 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001009372	A1	20010208	WO 2000-US20429	20000727
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			

EP 1203091 A1 20020508 EP 2000-950764 20000727  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL  
 JP 2003528938 T2 20030930 JP 2001-513627 20000727  
 PRIORITY APPLN. INFO.: US 1999-146648P P 19990730  
 WO 2000-US20429 W 20000727  
 OTHER SOURCE(S): MARPAT 134:159459  
 GI



I

- AB Chemiluminescent substrates of hydrolytic enzymes are disclosed having the general Formula Lumi-M-P, where Lumi is a chemiluminescent moiety capable of producing light (a) by itself, (b) with MP attached and (c) with M attached, wherein the different properties of Lumi-M-P and Lumi-M allow them to be distinguished. Lumi includes, but is not limited to, acridinium compds. (e.g. acridinium esters, carboxyamides, thioesters, and oxime esters), reduced forms thereof (e.g. acridans), and spiroacridan compds. M is selected from oxygen, nitrogen and sulfur. P is a group that can be readily removed by hydrolytic enzymes to give Lumi-M and P. The hydrolytic enzyme can be phosphatase, glycosidase, peptidase, protease, esterase, sulfatase, and guanidinobenzoatase. Thus, 2-Phos-DMAE (I) is synthesized and shown to be an excellent substrate of hydrolytic alkaline phosphatase to form 2-OH-DMAE. Both I and 2-OH-DMAE are chemiluminescent, but emit light at different emission maxima when they are treated with H<sub>2</sub>O<sub>2</sub> in strong alkaline solution I emits a strong, visible blue light at  $\lambda_{\text{max}}$  478 nm while 2-OH-DMAE emits a strong, visible orange light at  $\lambda_{\text{max}}$  602 nm, thus resulting in a bathochromic shift of emission maximum by 128 nm. One of the advantages in using chemiluminescent acridinium substrates like I to detect hydrolytic enzymes is that the products generated by the enzyme can be accumulated without undergoing significant decomposition during the enzymic reaction. In addition, under certain conditions the chemiluminescence from I is selectively and significantly suppressed, and thereby the overall signal differentiation of 2-OH-DMAE over I is improved. A heterogeneous immunoassay is also provided demonstrating I utility as a substrate for the chemiluminescent detection of TSH in human serum.
- IT **324762-34-7P**  
 RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)

(chemiluminescent substrates of hydrolytic enzymes such as phosphatases)

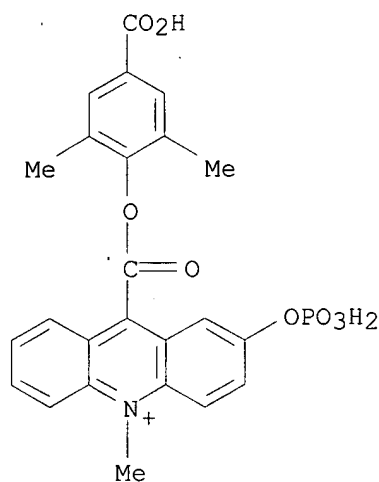
RN 324762-34-7 CAPLUS

CN Acridinium, 9-[(4-carboxy-2,6-dimethylphenoxy)carbonyl]-10-methyl-2-(phosphonooxy)-, salt with trifluoroacetic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 324762-33-6

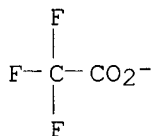
CMF C24 H21 N O8 P



CM 2

CRN 14477-72-6

CMF C2 F3 O2



IT 324762-37-0P

RL: ARG (Analytical reagent use); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(chemiluminescent substrates of hydrolytic enzymes such as phosphatases)

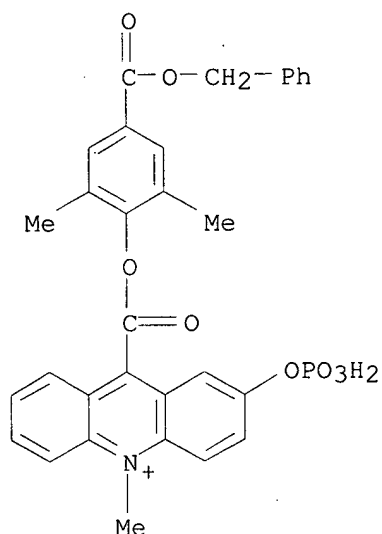
RN 324762-37-0 CAPLUS

CN Acridinium, 9-[[2,6-dimethyl-4-[(phenylmethoxy)carbonyl]phenoxy]carbonyl]-10-methyl-2-(phosphonooxy)-, salt with trifluoroacetic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 324762-36-9

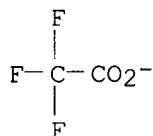
CMF C31 H27 N O8 P



CM 2

CRN 14477-72-6

CMF C2 F3 O2



IT 324762-40-5P 324762-43-8P 324762-46-1P

324762-49-4P

RL: ARG (Analytical reagent use); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses) (chemiluminescent substrates of hydrolytic enzymes such as phosphatases)

RN 324762-40-5 CAPLUS

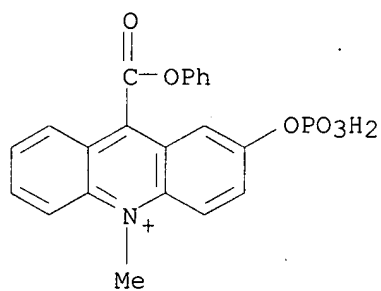
CN Acridinium, 10-methyl-9-(phenoxyphosphoryl)-2-(phosphonoxy)-, salt with trifluoroacetic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 324762-39-2

CMF C21 H17 N O6 P

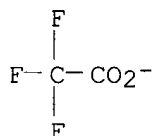




CM 2

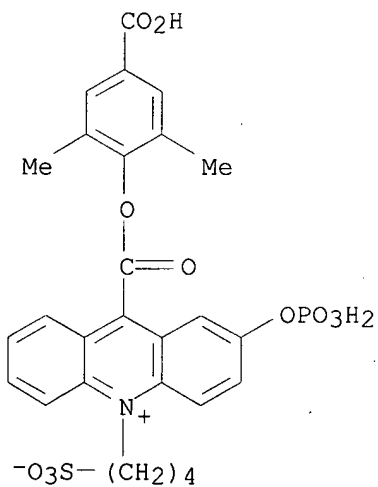
CRN 14477-72-6

CMF C2 F3 O2



RN 324762-43-8 CAPLUS

CN Acridinium, 9-[(4-carboxy-2,6-dimethylphenoxy)carbonyl]-2-(phosphonooxy)-10-(4-sulfobutyl)-, inner salt (9CI) (CA INDEX NAME)



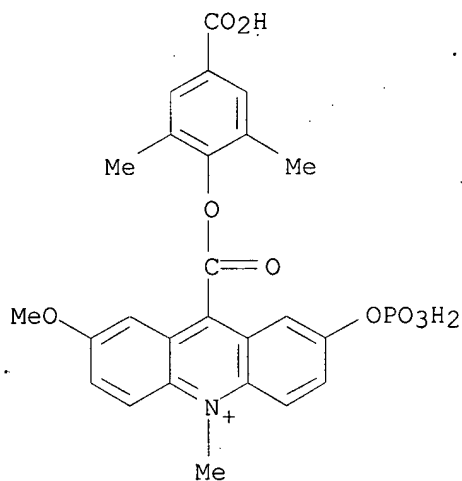
RN 324762-46-1 CAPLUS

CN Acridinium, 9-[(4-carboxy-2,6-dimethylphenoxy)carbonyl]-2-methoxy-10-methyl-7-(phosphonooxy)-, salt with trifluoroacetic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 324762-45-0

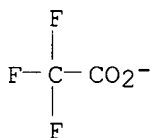
CMF C25 H23 N O9 P



CM 2

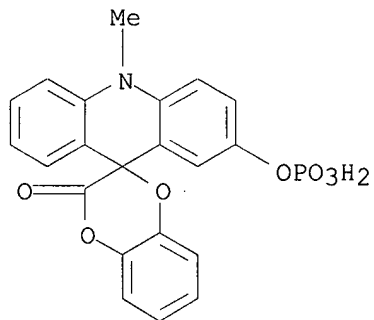
CRN 14477-72-6

CMF C2 F3 O2



RN 324762-49-4 CAPLUS

CN Spiro[acridine-9(10H),2'(3'H)-[1,4]benzodioxin]-3'-one,  
10-methyl-2-(phosphonooxy)- (9CI) (CA INDEX NAME)



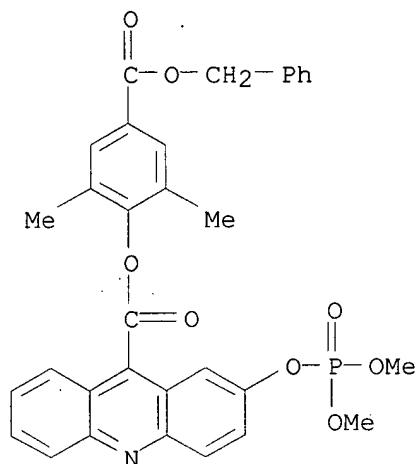
IT 324762-61-0P 324762-62-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(chemiluminescent substrates of hydrolytic enzymes such as  
phosphatases)

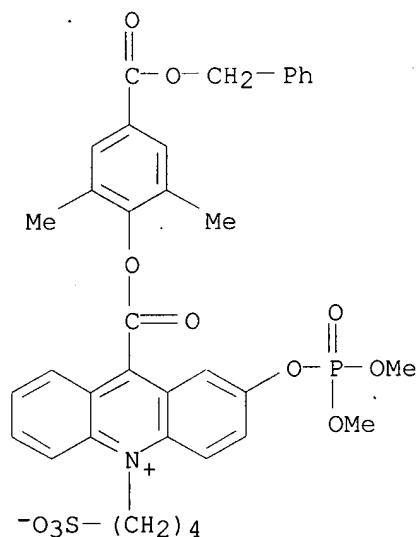
RN 324762-61-0 CAPLUS

CN 9-Acridinecarboxylic acid, 2-[(dimethoxyphosphinyl)oxy]-,

2,6-dimethyl-4-[(phenylmethoxy)carbonyl]phenyl ester (9CI) (CA INDEX NAME)



RN 324762-62-1 CAPLUS  
CN Acridinium, 2-[(dimethoxyphosphinyl)oxy]-9-[[2,6-dimethyl-4-[(phenylmethoxy)carbonyl]phenoxy]carbonyl]-10-(4-sulfobutyl)-, inner salt (9CI) (CA INDEX NAME)



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

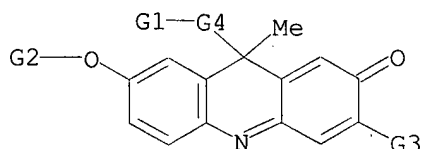
L23 ANSWER 2 OF 3 MARPAT COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 138:268046 MARPAT  
TITLE: Membrane transportable fluorescent substrates  
INVENTOR(S): Sparks, Alison L.

PATENT ASSIGNEE(S): PE Corporation (NY), USA  
 SOURCE: PCT Int. Appl., 49 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

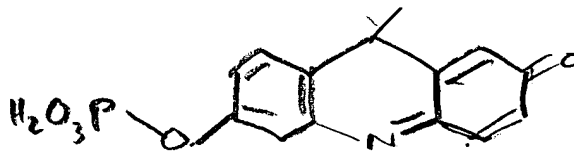
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003025192	A2	20030327	WO 2002-US29600	20020919
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG US 2003103902 A1 20030605 US 2002-246678 20020919 PRIORITY APPLN. INFO.: US 2001-323077P 20010919				

AB Intracellular enzyme-activated fluorescent substrates that can be transported into a cell are provided. The membrane transportable fluorescent substrates are complexes (e.g., ionic complexes) formed between an enzyme activated fluorescent substrate and a carrier mol. The fluorescent substrates can be used in an intracellular assay of enzyme activity and/or expression.

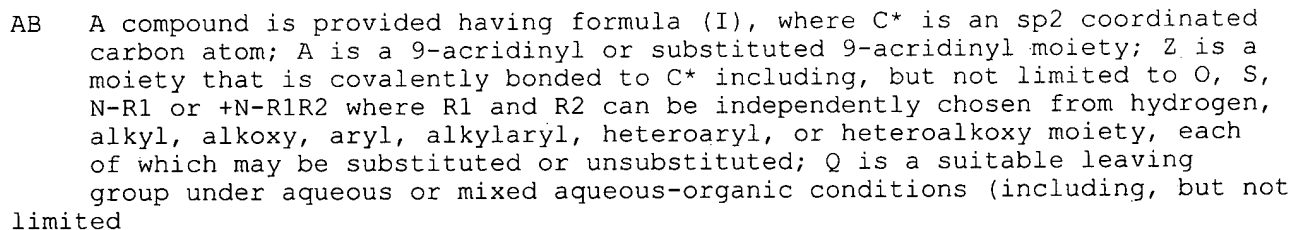
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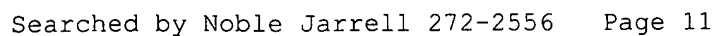
G1 = CO<sub>2</sub>H  
 G2 = PO<sub>3</sub>H<sub>2</sub>  
 MPL: claim 32



L23 ANSWER 3 OF 3 MARPAT COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 130:193962 MARPAT  
 TITLE: Peroxide-based chemiluminescent assays and chemiluminescent compounds including acridinecarboxylic acid derivatives used therein  
 INVENTOR(S): Waldrop, Alexander A., III; Vary, Calvin P. H.  
 PATENT ASSIGNEE(S): Maine Medical Center, USA; Capricorn Products, Inc.  
 SOURCE: PCT Int. Appl., 59 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

GI

MSTR 1



This file contains CAS Registry Numbers for easy and accurate substance identification. Title keywords, authors, patent assignees, and patent information, e.g., patent numbers, are now searchable from 1907-1966. TIFF images of CA abstracts printed between 1907-1966 are available in the PAGE display formats.

This file supports REGISTRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

=> d que nos l19

L14 STR  
L16 12 SEA FILE=REGISTRY SSS FUL L14  
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Creation date: 03-03-2004  
Indexing Officer: HTON1 - HUAN TON  
Team: OIPEBackFileIndexing  
Dossier: 09626566

Legal Date: 10-20-2003

No.	Doccode	Number of pages
1	A...	3
2	SPEC	2
3	CLM	21
4	REM	5

Total number of pages: 31

Remarks:

Order of re-scan issued on .....